ORDER NO. MD0605175S3

Service Manual

DVD Stereo System

SA-VK450GC / SA-VK450GS / SA-VK450GCS / SA-VK450GCT / SA-VK450EE

Colour

(S)... Silver Type

Self diagnosis and special mode setting (updates)
Please use this manual together with the service manual for Model No. [SA-VK450GC/GS/GCS/GCT-S, Order No. MD0602030C3] and [SA-VK450EE-S, Order No. MD0603053C3].

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1. Notes

- This supplement service manual is the updates for the self-diagnosis and special mode setting section for Model No. SA-VK450GC/GS/GCS/GCT-S on page 25~39, and SA-VK450EE-S on page 24~38.

2. Self diagnosis and special mode setting

This unit is equipped with functions for checking and inspecting namely: Self-Diagnostic and Test Mode.

2.1. Service Mode Summary Table

The service modes can be activated by pressing various button combination on the player and remote control unit.
Below is the summary of major checking:

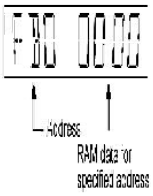
Player buttons	Remote control unit buttons	Application	Note
STOP	0	Error code display	(Refer to the section, "10.2.2 DVD Self Diagnostic Function-Error Code").
	5	Jitter checking	(Refer to the section "10.2.1 Service Mode Table 1 for mor information").
	6	Region display and mode	(Refer to the section "10.2.1 Service Mode Table 1 for mor information").
	7	Micro-processor firmware version check	
	FUNCTIONS	DVD laser drive current check	
	3	CD laser drive current check	
	▮▮	Initial setting of laser drive current	
		Initialization of the player (factory setting is restored.) Used after replacement of micro-computer, FLASH ROM IC, EEPROM and HDMI module.	
	8	Region and Firmware version display	
	ENTER	DVD Module Reset	

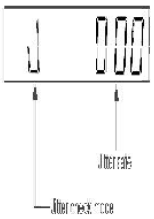
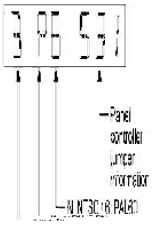
2.2. Service Mode Table 1

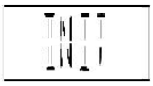
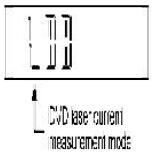
By pressing various button combinations on the player and remote control unit can activate the various service modes for checking.

Special Note:
Due to the limitations of the no. characters that can be shown on FL Display, the "FL Display" button on the remote control unit is used to show the following page. (Display 1 / Display 2).

2.2.1. Service Mode Table 1

Item		FL Display	Key Operation
Mode Name	Description		Remote Control Key
Error code check	Error code check. The latest error code stored in the EEPROM IC is displayed.	 Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: DVDnn UXX Error code = 0 x DBXX is expressed: DVDnn HXX Error code = 0 x DXXX is expressed: DVDnn FXXX Error code = 0 x 0000 is expressed: DVDnn F--- * "xx" denotes the error code	In STOP (no disc) mode, pres STOP button on the player, a "0" button on the remote control unit. *With pointing o cursor up and down on displ Cancelled automatically 5 seconds later. To exit, press [POWER] butt on main unit or remote contr
ADSC internal RAM data check	ADSC internal RAM data check. ADSC internal RAM data is read out and displayed.	 The value is shown in hexadecimal notation. The above example shows the data in ADSC address OFAh is 6901h.	In STOP (no disc) mode, pres STOP button on the player, a "1" & "2" button on the remo control unit. Press STOP or PLAY button.
CD laser drive current measurement	CD laser drive current measurement. CD laser drive current measured and the result is displayed together with the initial value stored in the EEPROM IC. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when POWER button on the player is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 25mA and the measured value is 22mA.	In STOP (no disc) mode, pres STOP button on the player, a "3" button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" button or remote control unit for next page (FL Display).
Device Name	Display the device name.	1. 2. 3.	In STOP (no disc) mode, pres STOP button on the player, a "4" button on the remote control unit. *With pointing o cursor up and down on displ Cancelled automatically 5 seconds later. To exit, press [POWER] butt on main unit or remote contr

Item		FL Display	Key Operation
Mode Name	Description		Remote Control Key
Jitter check	Jitter check. Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retired to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.	 Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation.	In STOP (no disc) mode, pres STOP button on the player, a "5" button on the remote control unit. Press STOP or OPEN button exit. Press "FL DISPLAY" button remote control unit for next page (FL Display).
Region display	Region display & mode		In STOP (no disc) mode, pres STOP button on the player, a "6" button on the remote control unit. Cancelled automatically 5 seconds later.
Micro-processor firmware version display & EEPROM checksum display.	Micro-processor firmware version display & EEPROM checksum display.		In STOP (no disc) mode, pres STOP button on the player, a "7" button on the remote co ntrol unit. Cancelled automatically 5 seconds later. Press "FL Display" button or remote control unit for next page. (FL Display)
DVD module firmware version display	DVD module firmware version display is on the FL Display.		In STOP (no disc) mode, pres STOP button on the player, a "8" button on the remote control unit. Cancelled automatically 5 seconds later.

Item		FL Display	Key Operation
Mode Name	Description		Remote Control Key
Initialization	Initialization. User settings are cancelled and player is initialized to factory setting.		In STOP (no disc) mode, pres STOP button on the player, a button on the remote control unit.
DVD Module Reset	To reset DVD Module.		In initialisation, press and ho STOP button on the player followed by “Enter” button o the remote control. Cancelled automatically 5 seconds later.
DVD laser drive current measurement	DVD laser drive current measurement. DVD laser drive current is measured and the result is displayed together with the initial value stored in the EEPROM IC. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when POWER button on the player is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 20mA and the measured value is 20mA.	In STOP (no disc) mode, pres STOP button on the player, a FUNCTIONS button on the remote control unit. Cancelled automatically 5 seconds later. Press “FL Display” button or remote control unit for next page (FL Display) on values DVD drive current.
Communic-ation error display	Displays frequency of communication errors between system control IC and mechanism control IC during DVD module.		In STOP (no disc) mode, pres STOP button on the player, a “MENU” button on the remot control unit. Cancelled automatically 5 seconds later.
Initial setting of laser drive current	Initial setting of laser drive current. Initial current value for each of DVD laser and CD laser is separately saved in the EEPROM IC.	The value denotes the current in decimal notation. The above example shows the initial current 20mA and 23mA for DVD laser and CD laser respectively when the laser is switched on.	In STOP (no disc) mode, pres STOP button on the player, a PAUSE button on the remote control unit. Cancelled automatically 5 seconds later. Press “FL Display” button or remote control unit for next page (FL Display) on values laser drive current.

Item		FL Display	Key Operation
Mode Name	Description		Remote Control Key
ECC error display	ECC decode error display.		In STOP (no disc) mode, pres STOP button on the player, a TOP MENU button on the remote control unit. Cancelled automatically 5 seconds later. Press “FL Display” button or remote control unit for next page (FL Display) on values laser drive current.
Time 1 check	Timer 1 check. Laser operation timer Operation time is measured separately for DVD laser and CD laser. Press “FL Display” button for next page of FL Display (to show CD laser time).	 Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. “0000” will follow “9999”.	In STOP (no disc) mode, pres STOP button on the player, a “ ” button on the remot control unit. Cancelled automatically 5 seconds later.
Timer 1 reset	Timer 1 reset. Laser operation timer Operation time of both DVD laser and CD laser is reset all at once.	 T1_0000/0000 (display1/display2)	While display Timer 1 data, press STOP button on the player, and “ “ button o the remote control unit. Cancelled automatically 5 seconds later.
Timer 2 check	Timer 2 check. Spindle motor operation timer. Press “FL Display” button for next page of FL Display.	Time is shown in 5 digits of decimal notation in a unit of 10 hours. “0000” will follow “9999”.	In STOP (no disc) mode, pres STOP button on the player, a “ “ button on the remot control unit. Cancelled automatically 5 seconds later.
Timer 2 reset	Timer 2 reset. Spindle motor operation timer.		While display Timer 2 data, press STOP button on the player, and “ “ button o the remote control unit. Cancelled automatically 5 seconds later.

2.2.2. DVD Self-Diagnostic Function Error Code

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F010	DVD Media disk	A specification value is size from the PARENTAL LOCK value of the appointed country.		Press [on main unit for ne error.
F020	DVD Media disk	There is no TT_SRPT. (RLBN is 0).		Press [on main unit for ne error.
F021	DVD Media disk	The number of TT_SRP is 0.		Press [on main unit for ne error.
F022	DVD Media disk	A specification value. It is size from the number of TT_SRP.		Press [on main unit for ne error.
F023	DVD Media disk	VTSN or in agreement with VTS_TTN. There is no SRP.		Press [on main unit for ne error.
F024	DVD Media disk	A specification value. It is size from TT_SRP. PTT_Ns		Press [on main unit for ne error.
F030	DVD Media disk	The number of TTU_SRP is 0.		Press [on main unit for ne error.
F031	DVD Media disk	A specification value. It is size from the number of TTU_SRP.		Press [on main unit for ne error.
F040	DVD Media disk	The number of SRP1 is 0.		Press [on main unit for ne error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F041	DVD Media disk	The number of PGCI_SRP is 0.		Press [on main unit for ne error.
F042	DVD Media disk	A specification value. It is size from the number of PGCI_SRP.		Press [on main unit for ne error.
F043	DVD Media disk	It is in agreement with Menu ID. There is no PGCI_SRP.		Press [on main unit for ne error.
F050	DVD Media disk	The number of TMAP_SRP is 0.		Press [on main unit for ne error.
F051	DVD Media disk	A specification value. It is size from the number of TMAP_SRP.		Press [on main unit for ne error.
F052	DVD Media disk	Specification TMAP_SA is 0.		Press [on main unit for ne error.
F053	DVD Media disk	The number of MAP_EN is 0.		Press [on main unit for ne error.
F060	DVD Media disk	Although C_POSIT exists, it is in PGC. There is no PGMAP.		Press [on main unit for ne error.
F061	DVD Media disk	Although C_POSIT exists, it is in PGC. There is no PGMAP.		Press [on main unit for ne error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F062	DVD Media disk	A specification value inside of PGC. It is size from the number of PGes.		Press [on main unit for ne error.
F063	DVD Media disk	Although C_POSIT exists, it is in PGC. There is no C_PBIT.		Press [on main unit for ne error.
F064	DVD Media disk	Although C_POSIT exists, it is in PGC. The number of PGes is 0.		Press [on main unit for ne error.
F065	DVD Media disk	Specification A cell number is 0.‘		Press [on main unit for ne error.
F066	DVD Media disk	A specification value inside of PGC. It is size from the number of Cell(s).		Press [on main unit for ne error.
F067	DVD Media disk	A blocked cell is present.		Press [on main unit for ne error.
F070	DVD Media disk	There is no NV_PACK data.		Press [on main unit for ne error.
F080	DVD Media disk	Under reference. There is no Cell number.		Press [on main unit for ne error.
F0E0	DVD Media disk	For [used as a DFD object] a user guide. A PGC control file < impossible.		Press [on main unit for ne error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F0E1	DVD Media disk	DFD main microcomputer. Compatibility with a DFD type < download is impossible.		Press [on main unit for ne error.
F0E2	DVD Media disk	DFD download start. PGC reproduction error.		Press [on main unit for ne error.
F0E3	DVD Media disk	Waiting for the completion of DFD download. PGC reproduction error.		Press [on main unit for ne error.
F0E4	DVD Media disk	At the time of DFD download AVDEC.		Press [on main unit for ne error.
F0E5	DVD Media disk	It is the farm file lead error at the time of DFD download.		Press [on main unit for ne error.
F0E6	DVD Media disk	DFD alteration check error of the read firmware.		Press [on main unit for ne error.
F0F0	DVD Media disk	There is no farm file used as a DFD object and it is downloading needlessly.		Press [on main unit for ne error.
F0F1	DVD Media disk	The firware which is in agreement with DFD download conditions < unnecessary.		Press [on main unit for ne error.
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display		Press [on main unit for ne error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F4FF	Force initialize failure (time out)	Timeout when force initialization fails		Press [on main unit for ne error.
F500	DSC error	DSC (IC8251) stops in the occurrence of servo error (startup, focus error, etc.)		Press [on main unit for ne error.
F501	DSC not Ready error	DSC-system computer communication error (Communication failure caused by idling of DSC)		Press [on main unit for ne error.
F502	DSC Time out error	Similar as F500		Press [on main unit for ne error.
F503	DSC communication Failure	Communication error (result error occurred although communication command was sent)		Press [on main unit for ne error.
F504	Abnormal adjusting DSC data slice offset			Press [on main unit for ne error.
F505	DSC Attention error	Similar as F500		Press [on main unit for ne error.
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc media		Press [on main unit for ne error.
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect		Press [on main unit for ne error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data		Press [on main unit for ne error.
F602	Access failure to LEAD-IN caused by demodulation error	LEAD IN data unreadable		Press [on main unit for ne error.
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc		Press [on main unit for ne error.
F610	ODC abnormality	No permission for command execution		Press [on main unit for ne error.
F611	No CRC OK for a specific time (CD)	Access failure to seek address in CD series		Press [on main unit for ne error.
F612	No CRC OK for a specific time (DVD)	Access failure to ID data in DVD series		Press [on main unit for ne error.
F620	Laser safeguard: high temperature condition	High temperature of the laser guide unit (OPU unit)		Press [on main unit for ne error.
F621	Laser safeguard: circuit failure condition	Circuitry failure of the laser guide unit (OPU unit)		Press [on main unit for ne error.
F700	MBX overflow	When replying message to disc manager		Press [on main unit for ne error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F701	Message command does not end	Next message is sent before replying to disc manager		Press [on main unit for ne error.
F702	Message command changes	Message is changed before it is sent as a reply to disc manager		Press [on main unit for ne error.
F880	Task number is not appropriate	Message coming from a non-existing task		Press [on main unit for ne error.
F890	Sending message when message is being sent to AV task	Sending message to AV task		Press [on main unit for ne error.
F891	Message couldn't be sent to AV task	Begin sending message to AV task		Press [on main unit for ne error.
F893	FLASH ROM IC problem	FLASH ROM IC installed is not operating properly (Neccessary replacement of FLASH ROM IC) or firmware problem		Press [on main unit for ne error.
F894	EEPROM abnormality	EEPROM IC installed is not operating in normal condition (EEPROM contains neccessary data)		Press [on main unit for ne error.
F895	Region setting abnormality	Firm version agreement check for factory preset setting failure prevention. Check region setting & re-initialize		Press [on main unit for ne error.
F896	No existence model	Firm version agreement check for factory preset setting failure prevention		Press [on main unit for ne error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
F897	Initialize is not completed	Initialize completion check for factory preset setting failure prevention		Press [on main unit for ne error.
F898	Disagreement of hardware and software	Unsuitable combination of AV DECORDER, SDRAM and FLASH ROM (firmware)		Press [on main unit for ne error.
F8A0	Message command is not appropriate	Begin sending message to AV task		Press [on main unit for ne error.

Note:

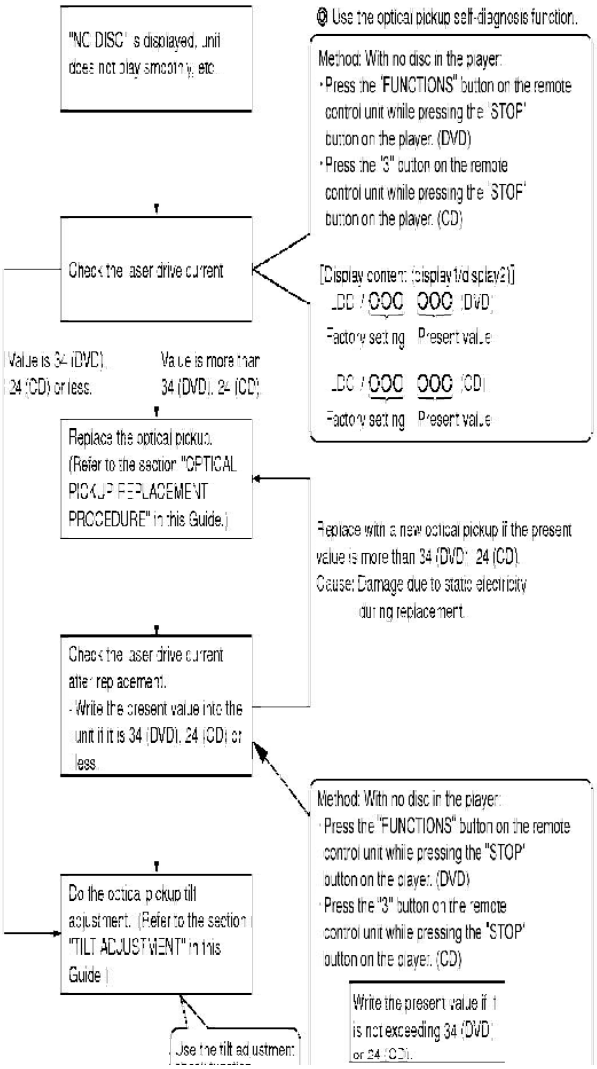
An error code will be canceled if a power supply is turned OFF.

***1: CPPM is the copy guard function beforehand written in the disk for protection of copyrights.**

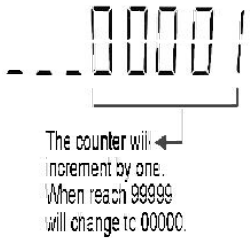
2.2.3. Optical Pickup Breakdown Diagnosis

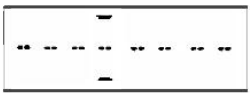
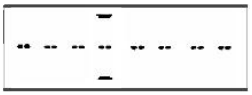
This unit is equipped with the optical pickup self-diagnosis function and the tilt adjustment check function. Follow the procedure described below during repair in order to perform self-diagnosis and tilt adjustment effectively. Especially when "NO DISC" is displayed, be sure to apply the self-diagnosis function before replacing with an optical pickup. Replacement of optical pickup generally requires when the present value of laser drive exceeds 45 (DVD) or 45 (CD).

Note:
Start diagnosis within three minutes after turning on the power (as diagnosis fails when the unit becomes warm).


"NC DISC" is displayed, unit does not play smoothly, etc.
Use the optical pickup self-diagnosis function.
Method: With no disc in the player:
• Press the "FUNCTIONS" button on the remote control unit while pressing the "STOP" button on the player. (DVD)
• Press the "3" button on the remote control unit while pressing the "STOP" button on the player. (CD)
Check the laser drive current
[Display content: (display1/display2)]
LDD / OOO OOO (DVD)
Factory setting Present value
LDC / OOO OOO (CD)
Factory setting Present value
Value is 34 (DVD), 24 (CD) or less.
Value is more than 34 (DVD), 24 (CD).
Replace the optical pickup. (Refer to the section "OPTICAL PICKUP REPLACEMENT PROCEDURE" in this Guide.)
Replace with a new optical pickup if the present value is more than 34 (DVD) 24 (CD).
Cause: Damage due to static electricity during replacement.
Check the laser drive current after replacement.
- Write the present value into the unit if it is 34 (DVD), 24 (CD) or less.
Method: With no disc in the player:
• Press the "FUNCTIONS" button on the remote control unit while pressing the "STOP" button on the player. (DVD)
• Press the "3" button on the remote control unit while pressing the "STOP" button on the player. (CD)
Write the present value if it is not exceeding 34 (DVD) or 24 (CD).
Do the optical pickup tilt adjustment. (Refer to the section "TILT ADJUSTMENT" in this Guide.)
Use the tilt adjustment

2.3. Special Mode Table 2

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Self - Diagnostic Mode	To enter into self diagnostic checking for main unit.		1. Select [ ] fo DVD/CD mode. 2. Press and hold [button for 3 seconds follow by [ ]. To exit, press button on main unit or remote control.
CD Changer Reliability Test (CRS1D)	To determine the reliability of CD/ DVD Changer Unit. (For more information, refer to section 10.3.1)		In Self-Diagnostic Mode: 1. Select [ ] fo CD mode. 2. Press [1] on remote control.. To exit, press button on main unit or remote control. (The tray will return to PLAY position and then power off)
Doctor Mode	To enter into Doctor Mode for checking of various items and displaying EEPROM and firmware version.	1. 2. 1. All segments will light up for 1 second. 2. The Check Sum of EEPROM and firmware version will be display. * ROM correction ** Firmware version No:	In any mode: 1. Press [ ] butto on main unit follow by [4] and [7] on remote control. To exit, press [ENTER] button on remote control or button on main unit or remote control.

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Cold Start	Initialize backup data and start.		In doctor mode: 1. Press [4] on remote control. To exit, press [ENTER] button on remote control or button on main unit or remote control.
FL Display Test	To check the FL segments display (All segments will light up and LED will blink at 0.5 second interval)		In doctor mode: 1. Press [DIMMER] button on remote control.
Tape Eject Test	To check on the tape eject function (For deck 1/2)		In doctor mode: 1. Press [0] button on remote control.
Software Version and EEPROM Information Display	Execute Software Version and EEPROM checksum display for the microcontroller.	1. 2. Note: There is no EEPROM IC install. 3.	In doctor mode: 1. Press [ ] butto on main unit follow by [4] and [7] on remote control. To exit, press [ENTER] button on remote control or button on main unit or remote control.
Firmware Version checking	Execute Firmware Version checking display.		In doctor mode: 1. Press [ ] butto on main unit follow by [CANCEL] on remote control. To exit, press [ENTER] button on remote control or button on main unit or remote control.

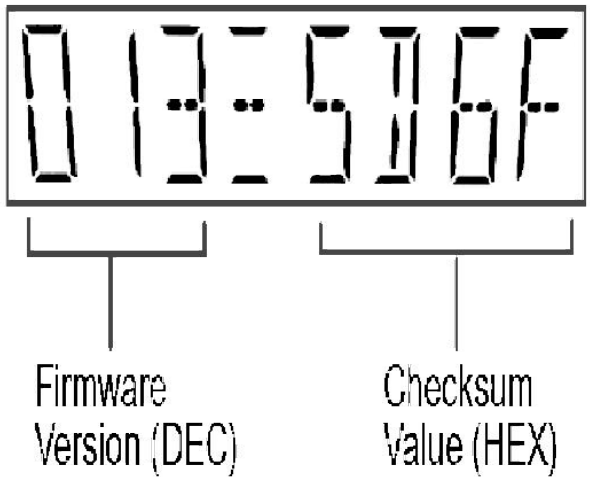
2.3.1. EEPROM Checksum (ROM Correction)

Purpose: To check for microprocessor firmware version and EEPROM checksum (ROM correction).
Below are the procedures for this mode.
Step 1: Enter into Doctor mode (for more information, refer to section 10.3 on key operation to enter into this mode.
Step 2: Check for firmware version and EEPROM checksum (By pressing STOP button on main unit

followed by “4” and “7” on remote control).

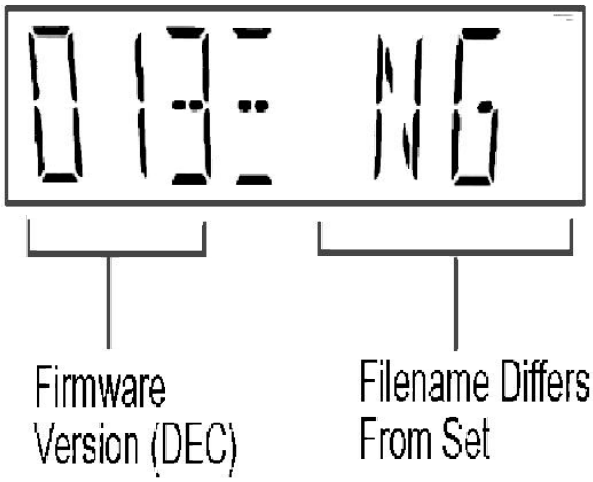
- When entering into DOCTOR MODE, the firmware version and checksum of EEPROM (if applicable) will appear on FL display. Below is the information on the EEPROM IC (ROM correction) under 3 possible situations:

1. In the case that the correction point existence data is other than 0 (ie. correction file exists), EEPROM checksum display for the microprocessor shall be made after calculating checksum by summing up the content of data area from EEPROM.



2. In the case that the correction point existence data is 0, [NO] shall be displated.

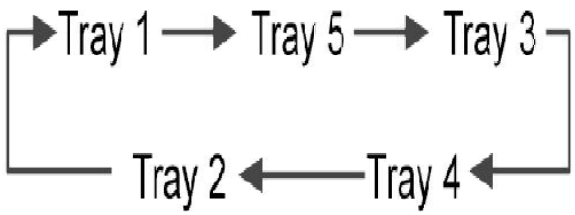
3. In cases that the filename is different even though a EEPROM is set, or no correction file exists, [NG] shall be displayed (the correction point existence data is set to 0 at this condition).



Note: Microprocessor firmware refers to version number for microprocessor IC. It is subject to change which would be updated accordingly. ROM correction checksum refers to the HEX code that is displayed upon key buttons pressed if an EEPROM is loaded in the unit.

2.3.2. CD/DVD changer unit ageing test mode

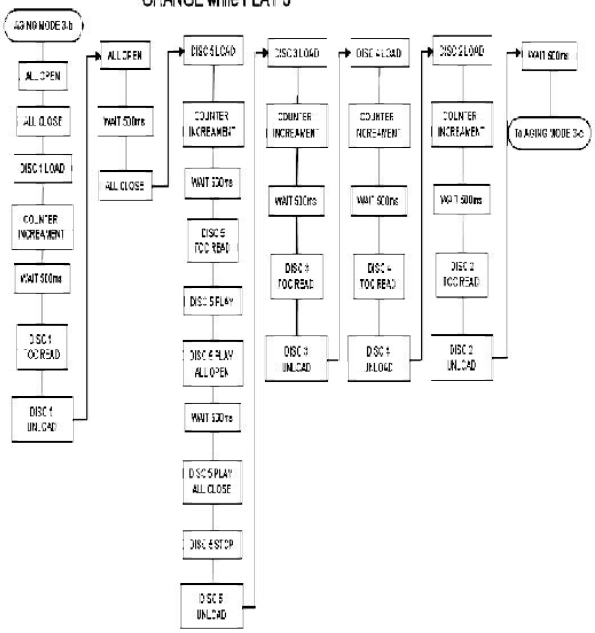
Below is the process flow chart of ageing for the CD/DVD changer unit. (CRS1D)



Mode 3	PLAY-CHANGE-OPEN mode aging (1 cycle)

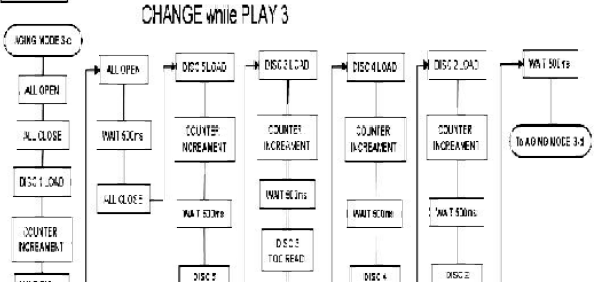
Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)

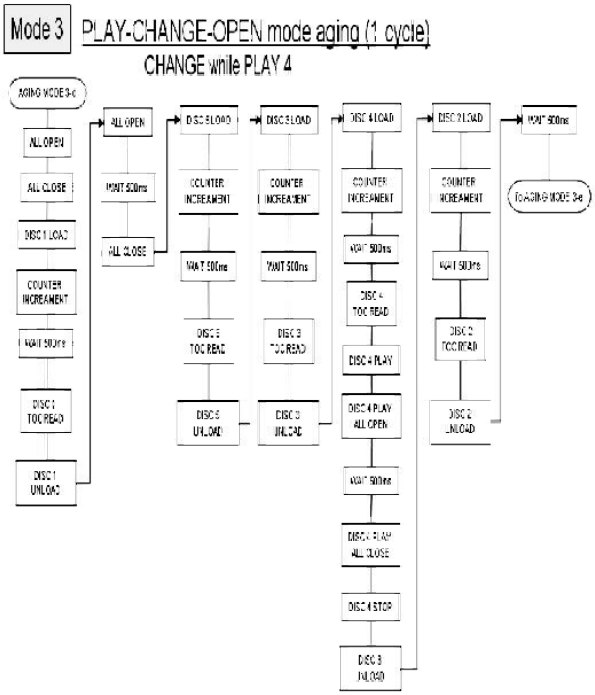
CHANGE while PLAY 5

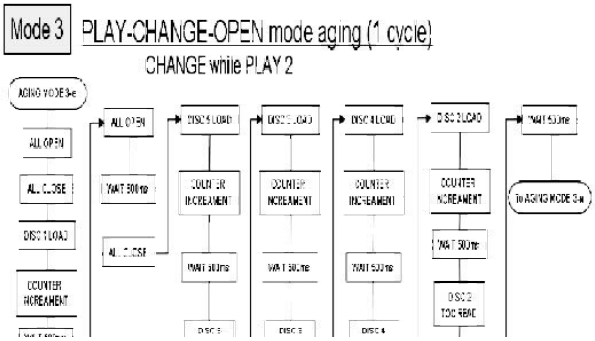


Mode 3 PLAY-CHANGE-OPEN mode aging (1 cycle)

CHANGE while PLAY 3





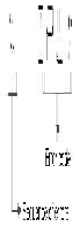


2.3.3. Error Code Table

Self-Diagnosis Function (refer Section 10.3) provides information on any problems occuring for the unit and its respective components by displaying the error codes. These error code such as U, H** and F** are stored in memory and held unless it is cleared.**

The error code is automatically display after entering into self-diagnostic mode.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
H01	Mode SW, plunger and capstan motor abnormal	The tray is not able to open.		For deck mechanism unit (F deck 1/2). Press [on main unit for next error.
H02	Rec INH SW abnormal	(Spindle servo, DSC (IC8251) Spindle motor, CLV servo error)		For deck mechanism unit (F deck 2). Press [on main unit for next error.
H03	HALF SW abnormal	(Traverse motor, IC8251)		For deck mechanism unit (F deck 1/2). Press [on main unit for next error.
F15	RESET SW abnormal	REST SW: ON is not detected within the specified time.		For DVD unit (For Traverse) Press [on main unit for next error.
F26	Transmission error between CD Servo LSI IC and microprocessor IC	When set to CD mode, the sense signal does not turn “Low”, a fail safe time after system command transmission is sent.		For DVD unit (For Traverse) Press [on main unit for next error.
F61	Power Amp IC output abnormal	Upon power on, PCONT=HIGH, DCDET=L after checking LSI.		For power. Press [on main unit for next error.
IHMS	Cam gear abnormality	Cam gear does not rotate to “HOME” position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
ICSL	Cam gear/gear units abnormal	Cam gear does not rotate to “PLAY” driving position and hence does not drive playing tray to “STOCK” position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
ISTK	Drive rack/gear assembly abnormal	The tray drive rack does not move to “STOCK” position. (Tray does not move to “STOCK” position)		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
IPLY	Drive rack/gear assembly abnormal	The tray drive rack does not move to “PLAY” position. (Tray does not move to “PLAY” position)		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
ITOP	UD assembly	UD Rack does not move to front direction. This lead to UD base not raise to top position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
IUDS	UD assembly	After TOP SW is detected, UD rack does not move into tray 1 position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
HOME	Cam gear/gear assembly abnormal	Cam gear does not move to “HOME” position under following conditions 1. After tray is load to “PLAY” position. 2. After tray is unload to “STOCK” position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
LOAD	Tray drive assembly abnormal	Tray unit does not move from “STOCK” to “PLAY” position		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
PDRV	Cam gear/gear assembly abnormal	Cam gear does not move from “HOME” to “PLAY” drive position.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
UDU	UD base asssembly abnormal	UD Base assembly does not move upwards from tray 5 to tray 2		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
UDD	UD base asssembly abnormal	UD Base assembly does not move downwards from tray 1 to tray 5.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
UD1	UD base asssembly abnormal	UD Base assembly does not move to tray 1.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
F1NG	Fail - safe mode. (For open /close tray unit(s))	When the tray open operation is performed, it fails to open. It will automatically close all trays after the time-out by the microprocessor. During this time when it fails, the error code will appear.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.
F2NG	Fail - safe mode. (For open /close tray unit(s))	When the tray close operation is performed, it fails to close. It will automatically open all trays after the time-out by the microprocessor. During this time when it fails, the error code will appear.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remarks
SRVC_TRV	To unlock the traverse unit for service	1. All trays set to "STOCK" position 2. Mechanism set to tray 5 3. Cam gear set to "HOME" position		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit.
RSET	Cam gear jam/ close sensor faulty	During tray re-open, the cam gear will rotate in the opposite direction to reset the cam gear position. When it fails, the error code will appear.		For CD/DVD changer unit (CRS1D). Press [SINGLE CHANGE] or main unit for next error.

CRS1D Error Code display

1. The errors that occured in CRS1D Mechanism can be recalled and displayed, in the order of the occurence under self-diagnostic (Refer to Section 10.3 for procedures to enter this mode.

- Only the first 5 errors will be memorized (in backup memory). The subsequence error shall be ignored and not memorize.
For system with EEPROM as memory backup,memory space in EEPROM is neccesary.

2. To display all error code memorized
In CRS1D Self-Diagnostic mode, press [SINGLE CHANGE] to display subsequence error code.
It shall repeat after reaching error no. 5.
e.g.:
[1 _ _ _ _ I H M S] [SINGLE CHANGE]
[2 _ _ _ _ I T O P] [SINGLE CHANGE]
[3 _ _ _ _ H O M E] [SINGLE CHANGE]
[4 _ _ _ _ L O A D] [SINGLE CHANGE]
[5 _ _ _ _ _ U D D] [SINGLE CHANGE]

3. To clear the error code memory
In CRS1D Self-Diagnostic mode, long press [SINGLE CHANGE] key (2s or more)

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